1	what is claimed is:		
2	1. A process for correcting a time axis of local chromatographic data to match		
3	reference chromatographic data while maintaining peak areas, comprising:		
4	obtaining reference calibration data from a reference chromatographic system;		
5	obtaining local calibration data from a local chromatographic system;		
6	generating local system correction functions based on an appropriate		
7	mathematical relationship using the reference calibration and the local calibration data;		
8	and		
9	applying the local system correction functions to local chromatographic data to		
10	generate corrected local chromatographic data,		
11	wherein the corrected local chromatographic data match with the reference		
12	calibration data on time axis and wherein peak areas in the local chromatographic data are		
13	maintained in the corrected local chromatographic data.		
14			
15	2. The process of claim 1, wherein the local system correction functions include a		
16	smoothed x-axis correction function and a y-axis correction function generated using one		
17	or more mathematical curve fitting techniques, said y-axis correction function is a first		
18	derivative of the x-axis correction function.		
19			
20	3. The process of claim 2, wherein the one or more mathematical curve fitting		
21	techniques are selected from the group consisting of linear regression, polynomial		
22	regression, logarithmic regression, cubic splining, and exponential regression.		
23 -			
24	4. The method of claim 2, wherein the local system correction functions are applied		
25	to the local chromatographic data through steps of:		
26	(1) determining a retention time correction (Δrt) from the smoothed x-axis		
27	correction function for a given reference retention time (rt);		
28	(2) copying a y value that is at retention time (rt + Δ rt) in the local		
29	chromatographic data to rt;		
30	(3) multiplying copied y value by (1+ dΔrt/drt), wherein dΔrt/drt is determined		
31	from the first derivative of the smoothed x-axis correction function;		
32	repeating steps (1) to (3) with each retention time data point in the local		
33	chromatographic data to create corrected local chromatographic data.		

1	5.	The process of claim 1, further comprising:	
2		extrapolating the local system correction functions to extend over a local	
3	chromatographic time frame of interest.		
4			
5	6.	The process of claim 1, further comprising:	
6		setting up the reference chromatography method in a local chromatographic	
7	system.		
8			
9	7.	The process of claim 6, further comprising:	
10		locking the local chromatographic system to the reference calibration data with an	
11	instru	mental correction technique.	
12			
13	8.	The process of claim 7, wherein the instrumental correction technique is RTL I	
14	metho	d.	
15			
16	9.	The process of claim 1, further comprising:	
17		translating the reference chromatographic method into a local chromatographic	
18	method using a method translation technique on a local chromatographic system.		
19			
20	10.	The process of claim 9, further comprising:	
21		fine tuning the local chromatographic method using an instrumental correction	
22	technic	que.	
23			
24	11.	The process of claim 10, wherein the instrumental correction technique is RTL I	
25	method	d.	
26			
27	12.	The process of claim 1, further comprising:	
28		replacing an x-axis unit in the reference calibration data, or local calibration data,	
29	or both, with a new x-axis unit.		
30			
31	13.	The process of claim 12, wherein the new x-axis unit is retention index, boiling	
32	point, c	carbon number, molecular size, or molecular weight.	
33			
34			

2		replacing an y-axis unit in the reference calibration data, or local calibration data,		
3	or both, with a new y-axis unit.			
4				
5	15.	The process of claim 14, wherein the new y-axis unit is concentration, percent,		
6	weigh	t, mass, moles, or mole fraction.		
7				
8	16.	The process of claim 1, further comprising:		
9		applying the local system correction functions to adjust the local calibration data		
10	and to	generate time-axis correct local calibration data that maintains the peak areas of the		
11		alibration data;		
12		determining a y-axis local system response correction function using the time-axis		
13	correc	t local calibration data and the reference calibration data;		
14		applying the y-axis local system response correction function to the local		
15	chrom	atographic data.		
16				
17	17.	The process of claim 1, wherein the reference calibration data is obtained from the		
18	referer	nce chromatographic system using an reference chromatographic method and a		
19	calibra	tion mix containing at least two calibration compounds, and wherein the local		
20	calibra	tion data is obtained on the local chromatography system using the reference		
21	chroma	atographic method and the same calibration mix.		
22				
23	18.	A process for correcting local chromatographic data with a reference retention		
24	time da	atabase, comprising:		
25		providing a reference retention time database;		
26		running a calibration mix on the local system to generate local calibration data;		
27		constructing local system correction functions to minimize differences between		
28	the loc	al calibration data and corresponding retention time values in the reference		
29	retentio	on time database for the calibration mix;		
30		applying the local system correction functions to adjust local chromatographic		
31	data; aı	nd		
32		using adjusted local chromatographic data to search the reference retention time		
33	databas	se to obtain more accurate search results.		
34				

The process of claim 1, further comprising:

1

14.

2		locking a local system to the reference retention time database using an	
3	instrumental method.		
4			
5	20.	The process of claim 19, wherein the instrumental method is RTL I method.	
6			
7	21.	A process for correcting local chromatographic data by generating a local	
8	retention time database from a reference retention time database, comprising:		
9		providing a reference retention time database;	
10		locking a local system to the reference retention time database using an	
11	instrumental method;		
12		running a calibration mix on the local system to generate local calibration data;	
13		constructing local system correction functions to minimize differences between	
14	the local calibration data and corresponding retention time values in the reference		
15	retentio	on time database for the calibration mix;	
16		applying the local system correction functions to adjust the reference retention	
17	time da	atabase values to generate a local retention time database; and	
18		searching the local retention time database using local chromatographic data.	
19			
20	22.	The process of claim 1, wherein generation of the local system correction	
21	functio	ns or the corrected local chromatographic data or both is performed at a remote	
22	location	n through a network.	
23			
24	23.	The process of claim 22, wherein the network is a local network or the Internet.	
25			
26	24.	A process for correcting a time axis of local chromatographic data to match	
27	referen	ce chromatographic data while maintaining peak areas, comprising:	
28		obtaining reference calibration data having a first and a last peak from a reference	
29	chroma	stographic system;	
30		obtaining local calibration data having a first and a last peak from a local	
31	chroma	tographic system;	
32		determining an time-axis simple linear function, $x' = mx + b$, that makes retention	
33	times of	f the first and last peak of the local calibration data match retention times of the	
34	first and	d last peak of the reference calibration data;	

The process of claim 18, further comprising:

1

19.

1	applying the time-axis simple linear function to the local calibration data to create		
2	a time-axis transformed local calibration data;		
3	dividing a y value of each time point in the time-axis transformed local calibration		
4	data by m to produce transformed local calibration data with corrected local peak areas;		
5	generating local system correction functions based on an appropriate		
6	mathematical relationship using the reference calibration and the transformed local		
7	calibration data;		
8	obtaining local chromatographic data,		
9	applying the time-axis simple linear function to local chromatographic data to		
10	create a time-axis transformed local chromatographic data;		
11	dividing a y value of each time point in the time-axis transformed local		
12	chromatographic data by m to produce transformed local chromatographic data with		
13	corrected local peak areas; and		
14	applying the local system correction functions to the transformed local		
15	chromatographic data to generate corrected local chromatographic data,		
16	wherein the corrected local chromatographic data match with the reference		
17	calibration data on time axis and wherein peak areas in the local chromatographic data are		
18	maintained in the corrected local chromatographic data.		
19			
20	25. An chromatographic apparatus for analyzing samples, comprising:		
21	means for producing local chromatographic data; and		
22	means for generating corrected local chromatographic data that match with		
23	reference chromatographić data on a time axis while maintaining peak areas of the local		
24	chromatographic data, comprising:		
25	means for creating local system correction functions based on an		
26	appropriate mathematical relationship using reference calibration data and local		
27	calibration data; and		
28	means for applying the local system correction functions to local		
29	chromatographic data.		
30			
31	26. The chromatographic apparatus of claim 25, wherein the means for generating		
32	corrected local chromatographic data further comprising:		
33	means for replacing an x-axis unit in the reference calibration data, or local		
34	calibration data, or both, with a new x-axis unit.		

- 27. The chromatographic apparatus of claim 25, wherein the means for generating
 corrected local chromatographic data further comprising:
 means for replacing a y-axis unit in the reference calibration data, or local
- 4 calibration data, or both, with a new y-axis unit.
- 6 28. The chromatographic apparatus of claim 25, wherein the means for generating corrected local chromatographic data further comprising:
- 8 means for determining a y-axis local system response correction function; and
- 9 means for applying the y-axis local system response correction function to the
- 10 local chromatographic data.

5